

Questions That Matter

COVID-19 Vaccine | Will Discovery Mean A Full Recovery?

Despite hopeful news about the development of several COVID-19 vaccines, widespread availability, distribution, and vaccination are the next big steps toward a new normal and economic recovery.

How this will shape 2021

Vaccine prospects bring hope. Recent positive news about two vaccine candidates – from Pfizer and Moderna – represent a critical step toward alleviating COVID-19 and its devastating social, economic, and financial repercussions. More vaccines are on the way.

Our economic forecast assumes a vaccine is widely available around mid-2021. Successful vaccines will serve to both reopen key sectors of the economy and change the behavior of economic agents to reengage in person-to-person activities. Indeed, the economic recovery from the pandemic will not occur until health concerns are forcefully and credibly addressed.

Vaccines are only part of fighting COVID-19. Beyond vaccines, research continues to develop effective treatments. Antivirals, monoclonal antibodies, and convalescent plasma therapies show promise or have already been approved—like Remdesivir. Another piece of the puzzle is management of patients so that hospitals remain open and deaths are prevented. Monitoring equipment, such as non-invasive ventilators and shared medical best practices will play a part. Availability and acceptance of new tests and safety protocols in hospitals will also help society return to a new normal.

What we think and why

Discovery is not enough. While achieving widespread availability of a safe and effective vaccine by midyear 2021 is possible, a number of factors need to fall in line to ensure that outcome.

Production capacity limits imply more vaccines are needed. Pfizer has projected delivery of upward of 1.3 billion doses in 2021, while Moderna has given a range of 500 million to 1 billion. Both vaccines are two-dose regimens. Assuming the upper end of the estimates, that production is at full capacity on day one and that a significant percentage of production is regularly allocated to the U.S. (30%-35%), we project the country will achieve herd immunity (70% of the population) in July-August 2021. Bottom line: More vaccines are needed.

Storage requirements could hamper deployment. The two prospects so far are both mRNA-based—an entirely new class of vaccines. Both are required to be frozen, with the Pfizer version needing to be stored at minus 70 degrees centigrade (roughly the temperature of dry ice) with an effective shelf life of only five days. The required two doses for either vaccine need to be given 21-28 days apart, with immunity being achieved 7-14 days afterward. This implies a complex distribution process requiring special equipment in the U.S. and worldwide.

Economies are interconnected, so a worldwide approach to supply is needed. Interdependence among economies means that governments cannot act in isolation to ensure a widespread and sustainable recovery. As such, approval and speedy distribution of additional vaccines are key to scale up vaccination programs rapidly. Variety is also important, as some emerging countries, especially those with less developed health care systems may struggle to cope with special storage and other constraints. Pricing and affordability will also be important to ensure wide uptake.

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The reported effectiveness of both Pfizer and Moderna vaccines, at 95% and 94.5%, respectively, are impressive, especially compared with initial hopes of 50%-60%

Theoretical herd immunity in the U.S. may not be achieved until July or August without more vaccines

Read more

[COVID-19 May Accelerate Disruption in the Global Vaccine Market](#), Aug. 3, 2020

[What Does Pharma's Quest For COVID-19 Vaccine Mean For Its Credit Quality and ESG Profile?](#) July 8, 2020

Risks around the baseline

Additional vaccine timelines are uncertain but look promising. Additional vaccine announcements are likely, and AstraZeneca's was the latest. Johnson & Johnson and Novavax are on deck. There are currently 55 vaccines in clinical trials on humans, and at least 87 in the preclinical phase. We understand that six vaccines have been approved for early or limited use but not by the FDA or the EU regulators. If approved, these vaccines would mean bigger vaccine stocks and greater diversity, which would broaden availability and help societies reach herd immunity faster. However, recent questions about AstraZeneca's vaccine underscores the uncertainties.

Long-term performance is unknown. The reported effectiveness of the Pfizer and Moderna vaccines, at 95% and 94.5%, respectively, are impressive, especially compared with initial hopes of 50%-60%. However, the length of the immunity, as well as the potential side effects, remain unknown. Additional doses may be required to maintain immunity. Down the road, if undesirable side effects emerge, support for COVID-19 vaccinations could decline.

Will people actually take the vaccine? Widespread availability of the vaccine is good, but people need to be willing to be vaccinated. Recent surveys in the U.S. have indicated that 50%-60% of Americans are willing to take a vaccine, an increase from earlier in the pandemic. However, they may delay taking COVID-19 vaccines, which were developed in record time, out of concern about safety and effectiveness.

This report is an extract from the S&P Global Ratings report, "Global Credit Outlook 2021: Back On Track?"

This report does not constitute a rating action

S&P Global Ratings believes there remains a high degree of uncertainty about the evolution of the coronavirus pandemic. Reports that at least one experimental vaccine is highly effective and might gain initial approval by the end of the year are promising, but this is merely the first step toward a return to social and economic normality; equally critical is the widespread availability of effective immunization, which could come by the middle of next year. We use this assumption in assessing the economic and credit implications associated with the pandemic (see our research here: www.spglobal.com/ratings). As the situation evolves, we will update our assumptions and estimates accordingly.

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